
SECTION 15430 - PLUMBING SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes plumbing specialties for the following:
 - 1. Water distribution systems.
 - 2. Soil, waste, and vent systems.
 - 3. Storm drainage systems.

1.3 SYSTEM PERFORMANCE REQUIREMENTS

- A. Provide components and installation capable of producing piping systems with following minimum working-pressure ratings, unless otherwise indicated:
 - 1. Water Distribution Piping: 125 psig (860 kPa).
 - 2. Soil, Waste, and Vent Piping: 10-foot head of water (30 kPa).
 - 3. Storm Drainage Piping: 10-foot head of water (30 kPa).

1.4 SUBMITTALS

- A. Product Data: For each plumbing specialty indicated. Include rated capacities of selected equipment and shipping, installed, and operating weights. Indicate materials, finishes, dimensions, required clearances, and methods of assembly of components; and piping and wiring connections for the following plumbing specialty products:
 - 1. Balancing valves.
 - 2. Strainers.
 - 3. Thermostatic water mixing valves and water tempering valves.
 - 4. Water hammer arrestors.
 - 5. Trap seal primer valves and systems.

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6. Drain valves.
 7. Hose bibbs and hydrants.
 8. Cleanouts.
 9. Floor drains.
 10. Floor Sinks
 11. Vent caps, vent terminals, and roof flashing assemblies.
 12. Roof drains.
 13. Backflow Preventers

- B. Maintenance Data: For specialties to include in the maintenance manuals specified in Division 1. Include the following:
1. Thermostatic water mixing valves and water tempering valves.
 2. Trap seal primer valves and systems.

1.5 QUALITY ASSURANCE

- A. Product Options: Drawings indicate size, profiles, dimensional requirements, and characteristics of plumbing specialties and are based on the specific types and models indicated. Other manufacturers' products with equal performance characteristics may be considered. Refer to Division 1 Section "Substitutions."

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Thermostatic Water Mixing Valves:
 - a. Lawler Manufacturing Co., Inc.
 - b. Leonard Valve Co.
 - c. Mark Controls Corp.; Powers Process Controls.
 - d. Symmons Industries, Inc.
 - e. T & S Brass and Bronze Works, Inc.

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2. Hydrants:
 - a. Enpoco, Inc.
 - b. Josam Co.
 - c. Murdock, Inc.
 - d. Smith: Jay R. Smith Mfg. Co.
 - e. Tyler Pipe; Wade Div.
 - f. Watts Industries, Inc.; Ancon Drain Div.
 - g. Watts Industries, Inc.; Water Products Div.
 - h. Woodford Manufacturing Co.
 - i. Zurn Industries, Inc.; Hydromechanics Div.
 3. Water Hammer Arresters:
 - a. Amtrol, Inc.
 - b. Enpoco, Inc.
 - c. Josam Co.
 - d. Precision Plumbing Products, Inc.
 - e. Sioux Chief Manufacturing Co., Inc.
 - f. Smith: Jay R. Smith Mfg. Co.
 - g. Sparco, Inc.
 - h. Tyler Pipe; Wade Div.
 - i. Watts Industries, Inc.; Ancon Drain Div.
 - j. Watts Industries, Inc.; Water Products Div.
 - k. Zurn Industries, Inc.; Hydromechanics Div.
 4. Trap Seal Primer Valves:
 - a. Enpoco, Inc.
 - b. Josam Co.
 - c. Precision Plumbing Products, Inc.
 - d. Smith: Jay R. Smith Mfg. Co.
 - e. Tyler Pipe; Wade Div.
 - f. Watts Industries, Inc.; Ancon Drain Div.
 - g. Watts Industries, Inc.; Water Products Div.
 - h. Zurn Industries, Inc.; Hydromechanics Div.
 5. Backflow Preventers:
 - a. Cla-Val Co.
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- b. Conbraco Industries, Inc.
 - c. Grinnell Corp.; Mueller Co. Marketing Group for Hersey Products Div.
 - d. IMI Cash Valve
 - e. Sparco, Inc.
 - f. Watts Industries, Inc.; Water Products Div.
 - g. Zurn Industries, Inc.; Wilkins Div.

2.2 THERMOSTATIC WATER MIXING VALVES

- A. General: ASSE 1017, manually adjustable, thermostatic water mixing valve with bronze body. Include check stop and union on hot- and cold-water-supply inlets, adjustable temperature setting, and capacity at pressure loss as indicated.
 - 1. Liquid-Filled Motor, Operation and Pressure Rating: 100 psig (690 kPa) minimum.
- B. Thermostatic Water Mixing Valves: Unit, with the following:
 - 1. Piping, of sizes and in arrangement indicated. Include valves and unions.
 - 2. Piping Component Finish: Polished chrome-plate.
 - 3. Mounting: Surface.
 - 4. Thermometer: Manufacturer's standard.
- C. Hydrotherapy, Thermostatic Water Mixing Valve Assemblies: Factory-fabricated, thermostatic water mixing valve; 2 shutoff valves and 1 volume-control valve; unions; check stops; thermometer; atmospheric vacuum breaker; piping and escutcheons.
 - 1. Sizes and Arrangement: As indicated.
 - 2. Piping Component Finish: Polished chrome-plate.
 - 3. Mounting: Surface.
- D. Photographic-Process, Thermostatic Water Mixing Valve Assemblies: Factory-fabricated, thermostatic water mixing valve; volume-control valve; unions; check stops; thermometer; atmospheric vacuum breaker; piping and escutcheons.
 - 1. Sizes and Arrangement: As indicated, Assembly can control outlet-water temperature within 0.5 deg F (0.25 deg C) throughout temperature and flow operating ranges.

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2. Mounting: Surface.

2.3 STRAINERS

- A. Strainers: Y-pattern, unless otherwise indicated, and full size of connecting piping. Include ASTM A 666, Type 304, stainless-steel screens with **3/64-inch (1.2-mm)** round perforations, unless otherwise indicated.
1. Pressure Rating: **125-psig (860-kPa)** minimum steam working pressure, unless otherwise indicated.
 2. **2-Inch NPS (DN50)** and Smaller: Bronze body, with female threaded ends.
 3. **2-1/2-Inch NPS (DN65)** and Larger: Cast-iron body, with interior AWWA C550 or FDA-approved epoxy coating and flanged ends.
 4. Y-Pattern Strainers: Screwed screen retainer with centered blowdown.
 - a. Drain: Factory- or field-installed, hose-end drain valve.

2.4 HYDRANTS

- A. Wall Hydrants: ASME A112.21.3M or ASSE 1019, nonfreeze, automatic draining, antibackflow type, key operation, with **3/4- or 1-inch NPS (DN20 or DN25)** threaded or solder-joint inlet, and ASME B1.20.7 garden-hose threads on outlet. Include operating key for each hydrant.
1. Type: Recessed.
 2. Finish: Nickel bronze.

2.5 TRAP SEAL PRIMER VALVES

- A. Trap Seal Primer Valves: ASSE 1018, water-supply-fed type, with the following characteristics:
1. **125-psig (860-kPa)** minimum working pressure.
 2. Bronze body with atmospheric-vented drain chamber.
 3. Inlet and Outlet Connections: **1/2-inch NPS (DN15)** threaded, union, or solder joint.
 4. Gravity Drain Outlet Connection: **1/2-inch NPS (DN15)** threaded or solder joint.
 5. Finish: Chrome plated, or rough bronze for units used with pipe or tube that is not chrome finished.

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6. Cabinet: Steel box with stainless steel locking access door.

2.6 DRAIN VALVES

- A. Hose-End Drain Valves: MSS SP-110, 3/4-inch NPS (DN20) ball valve, rated for 400-psig (2760-kPa) minimum CWP. Include 2-piece, ASTM B 62 bronze body with standard port, chrome-plated brass ball, replaceable seats and seals, blowout-proof stem, and vinyl-covered steel handle.
1. Inlet: Threaded or solder joint.
 2. Outlet: Short-threaded nipple with ASME B1.20.7 garden-hose thread and cap.
- B. Stop-and-Waste Drain Valves: MSS SP-110, ball valve, rated for 200-psig (1380-kPa) minimum CWP or MSS SP-80, Class 125, gate valve; ASTM B 62 bronze body, with 1/8-inch NPS (DN6) side drain outlet and cap.

2.7 MISCELLANEOUS PIPING SPECIALTIES

- A. Water Hammer Arresters: ASME A112.26.1M, ASSE 1010, or PDI-WH 201, bellows or piston type with pressurized cushioning chamber. Sizes are based on water-supply fixture units, ASME A112.26.1M sizes A through F and PDI-WH 201 sizes A through F.
- B. Open Drains: Shop or field fabricate from ASTM D2665 Schedule 40 pipe and fittings. Include P-trap, PVC section of length to provide depth indicated; and where indicated. Size P-trap as indicated.
- C. Floor-Drain Inlet Fittings: Cast iron, with threaded inlet and threaded or spigot outlet, and trap seal primer valve connection.
- D. Downspout Nozzles: Cast-bronze body with threaded inlet for pipe size indicated, and cast-bronze wall flange with mounting holes.
1. Finish: Nickel bronze.

2.8 BACKFLOW PREVENTERS

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- A. General: ASSE standard, backflow preventers, of size indicated for maximum flow rate and maximum pressure loss indicated.
 - 1. 2-inch NPS (DN50) and Smaller: Bronze body with threaded ends.
 - 2. 2-1/2-Inch NPS (DN65) and Larger: Bronze, cast-iron, steel, or stainless-steel body with flanged ends.
 - a. Interior Lining: AWWA C550 or FDA-approved, epoxy coating for backflow preventers having cast-iron or steel body.
 - 3. Interior Components: Corrosion-resistant materials.
 - 4. Exterior Finish: Polished chrome-plate if used in chrome-plated piping system.
 - B. Pipe-Applied, Atmospheric-Type Vacuum Breakers: ASSE 1001, with floating disc and atmospheric vent.
 - C. Hose-Connection Vacuum Breakers: ASSE 1011, nickel plated, with nonremovable and manual drain features, and ASME B1.20.7 garden-hose threads on inlet. Units attached to rough-bronze-finish hose connections may be rough bronze.
 - D. Reduced-Pressure-Principle Backflow Preventers: ASSE 1013, suitable for continuous pressure application. Include outside screw and yoke gate valves on inlet and outlet, and strainer on inlet; test cocks; and pressure-differential relief valve with ASME A112.1.2 air-gap fitting located between 2 positive-seating check valves.

PART 3 - EXECUTION

3.1 PLUMBING SPECIALTY INSTALLATION

- A. General: Install plumbing specialty components, connections, and devices according to manufacturer's written instructions.
- B. Install wall hydrants with integral or field-installed vacuum breaker.
- C. Install trap seal primer valves with valve outlet piping pitched down toward drain trap a minimum of one percent and connect to floor-drain body, trap, or inlet fitting. Adjust valve for proper flow.

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- D. Install cleanouts in aboveground piping and building drain piping as indicated, and where not indicated, according to the following:
 - 1. Size same as drainage piping up to 4-inch NPS (DN100). Use 4-inch NPS (DN100) for larger drainage piping unless larger cleanout is indicated.
 - 2. Locate at each change in direction of piping greater than 45 degrees.
 - 3. Locate at minimum intervals of 50 feet (15 m) for piping 4-inch NPS (DN100) and smaller and 60 feet (30 m) for larger piping.
 - 4. Locate at base of each vertical soil and waste stack.
 - E. Install vent flashing sleeves on stacks passing through roof. Secure over stack flashing according to manufacturer's written instructions.
 - F. Install floor drains at low points of surface areas to be drained. Set grates of drains flush with finished floor or as indicated. Size outlets as indicated.
 - G. Install individual traps for floor drains connected to sanitary building drain, unless otherwise indicated.
 - H. Install floor-drain flashing collar or flange so no leakage occurs between drain and adjoining flooring. Maintain integrity of waterproof membranes where penetrated.
 - I. Position floor drains for easy access and maintenance.
 - J. Install roof drains at low points of roof areas according to roof membrane manufacturer's written installation instructions. Size outlets as indicated.
 - K. Install roof-drain flashing collar or flange so no leakage occurs between drain and adjoining roofing. Maintain integrity of waterproof membranes where penetrated.
 - L. Position roof drains for easy access and maintenance.
 - M. Fasten wall-hanging plumbing specialties securely to supports attached to building substrate if supports are specified and to building wall construction if no support is indicated.
 - N. Fasten recessed, wall-mounting plumbing specialties to reinforcement built into walls.
 - O. Secure supplies to supports or substrate.

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- P. Install individual stop valve in each water supply to plumbing specialties. Use ball, gate, or globe valve if specific valve is not indicated.
 - Q. Install water-supply stop valves in accessible locations.
 - R. Install escutcheons at wall, floor, and ceiling penetrations in exposed finished locations and within cabinets and millwork. Use deep-pattern escutcheons if required to conceal protruding pipe fittings.
 - S. Include wood-blocking reinforcement for recessed and wall-mounting plumbing specialties.

3.2 CONNECTIONS

- A. Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping, fittings, and specialties. The following are specific connection requirements:
 - 1. Install piping connections between plumbing specialties and piping specified in other Division 15 Sections.
- B. Install hoses between plumbing specialties and appliances as required for connections.
- C. Supply Runouts to Plumbing Specialties: Install hot- and cold-water-supply piping of sizes indicated, but not smaller than required by authorities having jurisdiction.
- D. Drainage Runouts to Plumbing Specialties: Install drainage and vent piping, with approved trap, of sizes indicated, but not smaller than required by authorities having jurisdiction.

3.3 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

3.4 PLUMBING SPECIALTIES SCHEDULE

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- A. General: Specialties specified by this section are described on the drawings
Sheets P1.1 and P1.2.

END OF SECTION 15430